

WHAT IS CLAIMED IS:

1. A method for temporal drift correction in a real-time electronic communication comprising:
 - measuring a size of a receiving data buffer;
 - comparing the measured size to a predetermined nominal data buffer size;
 - determining an amount of temporal drift based on the comparison of the measured data buffer size and the nominal data buffer size;
 - determining a number of samples to be inserted in or removed from a playback data block to correct the temporal drift; and
 - modifying the number of samples in the playback data block to correct the temporal drift.
2. The method of claim 1 wherein the number of samples is modified without introducing audible artifacts.
3. The method of claim 1 wherein measuring the size of the receiving data buffer comprises measuring an instantaneous size of the receiving data buffer.
4. The method of claim 3 wherein measuring the size of the receiving data buffer comprises:
 - measuring an instantaneous communication delay associated with the receiving data buffer two or more times; and
 - averaging the measurements.
5. The method of claim 1 wherein the real-time electronic communication includes an audio communication.
6. The method of claim 5 wherein modifying the number of samples comprises performing heuristic resampling of the playback data block.

1 7. The method of claim 6 wherein performing heuristic resampling comprises:
2 analyzing multiple consecutive samples of audio data in the playback data block;
3 identifying consecutive samples with minimal variation in a parameter of their data;
4 and
5 adjusting the number of samples in the identified consecutive samples.

1 8. The method of claim 7 wherein adjusting the number of samples comprises removing
2 a sample from the identified consecutive samples.

1 9. The method of claim 7 wherein adjusting the number of samples comprises adding a
2 sample to the identified consecutive samples.

1 10. A computer program, residing on a computer-readable medium, for correcting
2 temporal drift in a real-time electronic communication, comprising instructions for causing a
3 computer to:
4 measure a size of a receiving data buffer;
5 compare the measured size to predetermined nominal data buffer size;
6 determine an amount of temporal drift based on the comparison of the measured data
7 buffer size and the nominal data buffer size;
8 determine a number of samples to be inserted in or removed from a playback data
9 block to correct the temporal drift; and
10 modify the number of samples in the audio playback data block to correct the
11 temporal drift.

1 11. The computer program of claim 10 wherein the number of samples is modified
2 without introducing audible artifacts.

1 12. The computer program of claim 10 wherein instructions for causing a computer to
2 measure the size of the receiving data buffer comprise instructions for causing a computer to
3 measure an instantaneous size of the receiving data buffer.

1 13. The computer program of claim 12 wherein instructions for causing a computer to
2 measure the communication delay comprise instructions for causing a computer to:
3 measure the instantaneous size of the receiving data buffer two or more times; and
4 average the measurements.

1 14. The computer program of claim 10 wherein the real-time electronic communication
2 includes an audio communication.

1 15. The computer program of claim 14 wherein instructions for causing a computer to
2 modify the number of samples comprises instructions for causing a computer to perform
3 heuristic resampling of the playback data block.

1 16. The computer program of claim 15 wherein instructions for causing a computer to
2 perform heuristic resampling comprise instructions for causing a computer to:
3 analyze multiple consecutive samples of audio data in the playback data block;
4 identify consecutive samples with minimal variation in a parameter of their data;
5 and adjust the number of samples in the identified consecutive samples.

1 17. A computer system running programmed processes comprising a process
2 for correcting temporal drift in a real-time electronic communication, the process causing the
3 computer system to:
4 measure a size of a receiving data buffer;
5 compare the measured size to predetermined nominal data buffer size;
6 determine an amount of temporal drift based on the comparison of the measured data
7 buffer size and the nominal data buffer size;
8 determine a number of samples to be inserted in or removed from a playback data
9 block to correct the temporal drift; and
10 modify the number of samples in the playback data block to correct the temporal drift.

1 18. The computer system of claim 17 wherein the number of samples is modified without
2 introducing audible artifacts.

1 19. The computer system of claim 17 wherein measuring the size of the receiving data
2 buffer comprises measuring an instantaneous size of the receiving data buffer.

1 20. The computer system of claim 19 wherein measuring the size of the receiving data
2 buffer comprises:
3 measuring the instantaneous communication delay associated with the receiving data
4 buffer two or more times; and
5 averaging the measurements.

1 21. The computer system of claim 17 wherein the real-time electronic communication
2 includes an audio communication.

1 22. The computer system of claim 21 wherein modifying the number of samples
2 comprises performing heuristic resampling of the audio playback data block.

1 23. The computer system of claim 22 wherein performing heuristic resampling
2 comprises:
3 analyzing multiple consecutive samples of audio data in the playback data block;
4 identifying consecutive samples with minimal variation in a parameter of their data;
5 and
6 adjusting the number of samples in the identified consecutive samples.